

Amendments to the Claims:

3/4/02 \*  
73/118.1  
Claim 1 (previously presented): A vehicle wheel bearing comprising: (outer race) (inner race)

- \* a) a vehicle-wheel-bearing non-rotatable section;
- b) a vehicle-wheel-bearing rotatable section rotatably attached to the non-rotatable section, wherein at least one of the non-rotatable and rotatable sections includes at least a portion of an inboard bearing seal, wherein at least one of the non-rotatable and rotatable sections includes at least a portion of an outboard bearing seal, and wherein the outboard bearing seal is spaced apart from the inboard bearing seal; and
- e) at least one sensor disposed between the inboard and outboard bearing seals and having an output used for determining at least one component of a force applied to the rotatable section, wherein the determined at-least-one component is an input to a vehicle control system.

Claim 2 (previously presented): The vehicle wheel bearing of claim 1, wherein the vehicle control system is chosen from the group consisting of a vehicle braking system, a vehicle anti-lock braking system, a vehicle stability enhancement system, a vehicle anti-rollover system, a vehicle traction system, and a vehicle acceleration system.

Claim 3 (original): The vehicle wheel bearing of claim 2, wherein the output is used for determining three mutually orthogonal components of the force.

Claim 4 (original): The vehicle wheel bearing of claim 1, wherein the at-least-one sensor includes a stress-based load sensor.

Claim 5 (original): The vehicle wheel bearing of claim 1, wherein the rotatable section includes a first race, wherein the non-rotatable section includes a second race, wherein the first and second races define a raceway, wherein the vehicle wheel bearing also includes rolling elements disposed in the raceway, and wherein the at-least-one sensor senses the passage of the rolling elements around the raceway past the at-least-one sensor.

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Claim 6 (original) The vehicle wheel bearing of claim 1, wherein the at-least-one sensor measures the distance between the non-rotatable and rotatable sections.

Claim 7 (currently amended): The vehicle wheel bearing of claim 1, wherein the at-least-one sensor measures temperature, and wherein the output of the at-least-one sensor is used without any non-temperature sensor output for determining the at-least-one component of the force.

Claim ~~8~~ (original): A vehicle wheel bearing comprising:

- a) a vehicle-wheel-bearing non-rotatable section;
- b) a vehicle-wheel-bearing rotatable section rotatably attached to the non-rotatable section; and
- c) at least one sensor attached to at least one of the non-rotatable and rotatable sections and having an output used for determining at least one component of a force applied to the rotatable section, wherein the rotatable section includes a first race, wherein the non-rotatable section includes a second race, wherein the first and second races define a raceway, wherein the vehicle wheel bearing also includes rolling elements disposed in the raceway, and wherein the at-least-one sensor senses the passage of the rolling elements around the raceway past the at-least-one sensor.

Claim 9 (original): The vehicle wheel bearing of claim 8, wherein the at-least-one sensor is attached to the second race.

Claim 10 (original): The vehicle wheel bearing of claim 8, wherein the at-least-one sensor is permanently attached to the second race.

Claim 11 (original): The vehicle wheel bearing of claim 8, wherein the determined at-least-one component is an input to a vehicle control system.

Claim ~~12~~ (original): A vehicle wheel bearing comprising:

- a) a vehicle-wheel-bearing non-rotatable section;

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b) a vehicle-wheel-bearing rotatable section rotatably attached to the non-rotatable section; and


c) at least one sensor attached to at least one of the non-rotatable and rotatable sections and having an output used for determining at least one component of a force applied to the rotatable section, wherein the at-least-one sensor measures the distance between the non-rotatable and rotatable sections.

Claim 13 (original): The vehicle wheel bearing of claim 12, wherein the non-rotatable section includes a hub, and wherein the at-least-one sensor is attached to the hub.

Claim 14 (original): The vehicle wheel bearing of claim 13, wherein the at-least-one sensor is permanently attached to the hub.

Claim 15 (original): The vehicle wheel bearing of claim 12, wherein the determined at-least-one component is an input to a vehicle control system.

Claim 16 (currently amended): A vehicle wheel bearing comprising:


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- a) a vehicle-wheel-bearing non-rotatable section;
  - b) a vehicle-wheel-bearing rotatable section rotatably attached to the non-rotatable section; and
  - c) at least one sensor attached to at least one of the non-rotatable and rotatable sections and having an output used for determining at least one component of a force applied to the rotatable section, wherein the at-least-one sensor measures temperature, ~~and~~ wherein the determined at-least-one component is an input to a vehicle control system, and wherein the output of the at-least-one sensor is used without any non-temperature sensor output for determining the at-least-one component of the force.

Claim 17 (original): The vehicle wheel bearing of claim 16, wherein the non-rotatable section includes a hub, and wherein the at-least-one sensor is attached to the hub.

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Claim 18 (original): The vehicle wheel bearing of claim 17, wherein the at-least-one sensor is permanently attached to the hub.

Claim 19 (previously presented): The vehicle wheel bearing of claim 16, wherein the vehicle control system is chosen from the group consisting of a vehicle braking system, a vehicle anti-lock braking system, a vehicle stability enhancement system, a vehicle anti-rollover system, a vehicle traction system, and a vehicle acceleration system.

 Claim 20 (currently amended): A method for controlling a vehicle having a wheel bearing including a non-rotatable section, including a rotatable section rotatably attached to the non-rotatable section, and including rolling elements disposed between the non-rotatable and rotatable sections, wherein the method comprises the steps of:

- a) attaching at least one sensor to at least one of the non-rotatable and rotatable sections, wherein the at-least-one sensor measures at least one of the passage of the rolling elements, and the distance between the non-rotatable and rotatable sections, ~~and a temperature~~, and wherein the at-least-one sensor has an output;
- b) determining at least one component of a force applied to the rotatable section from the output of the attached at-least-one sensor of step a); and
- c) controlling the vehicle based at least in part on the determined at-least-one component of step b).

Claim 21 (original): The method of claim 20, wherein step b) determines three mutually orthogonal components of the force.